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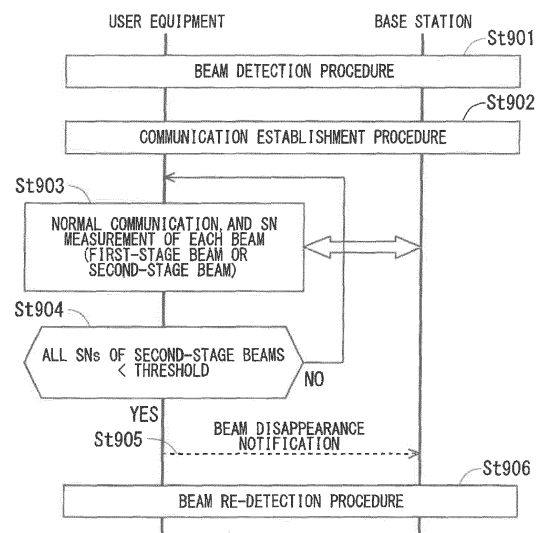
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18770534.8 / 3 605 867</p> | <p>(71) Applicant: MITSUBISHI ELECTRIC CORPORATION
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(54) **COMMUNICATION SYSTEM**

(57) Provided is a technology capable of securing satisfactory communication quality. A communication system includes a user equipment, and a base station configured to be connected to the user equipment to perform radio communication with the user equipment. The user equipment performs radio communication with a beam. When the user equipment detects a beam disappearance state, being a incapable of maintaining communication quality with the base station (St904), the user equipment transmits a notification of the beam disappearance state with a beam having a wider half width than a half width before the detection of the beam disappearance state (St905).

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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2016/353510 A1 (ZHANG YUANYUAN [CN] ET AL) 1 December 2016 (2016-12-01) * paragraph [0028] - paragraph [0036]; figures 6-12 * * paragraph [0045] - paragraph [0060] * -----	1-11	INV. H04B7/06 H04W16/28 H04W24/04 H04B7/024 H04B7/08
X	WO 2016/165128 A1 (HUAWEI TECH CO LTD [CN]) 20 October 2016 (2016-10-20)	1-4, 7-9	TECHNICAL FIELDS SEARCHED (IPC) H04B
A	* page 34, line 1 - page 36, line 31 * * page 45, line 25 - page 46, line 12 * -& US 2018/042000 A1 (ZHANG JIAN [CN] ET AL) 8 February 2018 (2018-02-08) * paragraph [0231] - paragraph [0254] * * paragraph [0384] - paragraph [0391] * -----	5, 6	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 2 August 2023	Examiner Neeb, Christoph
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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02-08-2023

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2016353510 A1	01-12-2016	CN 107005858 A	01-08-2017
		EP 3100488 A1	07-12-2016
		US 2016353510 A1	01-12-2016
		US 2019199615 A1	27-06-2019
		WO 2016127403 A1	18-08-2016

WO 2016165128 A1	20-10-2016	CN 107534467 A	02-01-2018
		EP 3280068 A1	07-02-2018
		US 2018042000 A1	08-02-2018
		WO 2016165128 A1	20-10-2016

US 2018042000 A1	08-02-2018	CN 107534467 A	02-01-2018
		EP 3280068 A1	07-02-2018
		US 2018042000 A1	08-02-2018
		WO 2016165128 A1	20-10-2016

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82